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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/551,570
Filing Date: April 13, 2006
Appellant(s): BEIL ET AL.

Edward M. Weisz
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/5/2009 appealing from the Office action mailed 10/22/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Higuchi is U.S. Patent No. 6,241,358. The appellant's statement lists the patent number for Ohtsuki twice.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2003/0156074	RANGANATHAN et al	8-2003
6,241,358	HIGUCHI et al	6-2001
6,036,328	OHTSUKI et al	3-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 6-14, 16 and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranganathan et al in view of Higuchi et al (US 6,241,358) and Ohtsuki et al (US 6,036,328).

Re claims 1 and 13: Ranganathan et al discloses a display [entire screen displaying images] comprising a polygonal luminous area corresponding the entire screen, wherein the polygonal luminous area comprises: a plurality of individual

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polygonal luminous modules [Liquid crystal panels] arranged in a modular manner in the polygonal luminous area to correspond to the size of the entire screen; wherein the luminous modules are selected from a basic set of different sized modules; wherein the basic set of modules comprises: a first module [102] having a first size, a second module [105] having a second size, a third module [103] having a length that corresponds to the length of the first module and a width that corresponds to the second module, and a fourth module [104] having a length that corresponds to the width of the first module and a width that corresponds to the length of the second module; and wherein the luminous area [Figure 1E] comprises one of each of the luminous modules on the basic set of different sized modules. The method of producing the luminous area as found in claim 1 would have been drawn directly from the disclosure of the apparatus found in Ranganathan et al. [It is understood that the displays are reasonably considered luminous modules as it is commonly known that in use OLED and LCD displays emit light in order to be viewed. The examiner understands that liquid crystal panels alone are often including backlights and do not themselves produce light. However the applicant states in the remarks, "It is possible for a luminous module without a light input part and a light emitting diode to be luminous." In other words the LCD is luminous thanks to a standard backlight.] [The method steps claimed would have been drawn directly from the forming of the apparatus as claimed and as taught by Ranganathan.] [Figures 1d and 1e, paragraph 57]

Ranganathan fails to teach a backlighting apparatus.

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Higuchi et al teaches a backlighting apparatus [BL] for use behind a LCD panel display [LP] in figure 1.

Ohtsuki et al teaches backlighting a passive display panel [11] to demonstrate the wide scope of "display" as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that each individual [LCD] of Ranganathan would require backlighting as taught by Higuchi in order to project an image as commonly known in the art of LCD to require outside lighting sources. Therefore the individual backlights behind the individual panels may be interpreted as coming together to form a "backlighting apparatus with a polygonal luminous area" and the individual LCD panels of Ranganathan come together to form a "display" as claimed and referred to as the "entire screen" by Ranganathan. As shown from the teachings of Ohtsuki, a display may be a passive board projecting an image. In other words, the "display" as claimed does not require a single contiguous liquid crystal panel.

Re claims 2 and 14: Ranganathan shows when displays [102-105] are brought together as shown in figure 1d, the polygonal luminous area is rectangular and comprises individual rectangular modules.

Re claims 4, 8, 16 and 20: Ranganathan fails to teach the modules having a light input area with light emitting diodes.

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Higuchi et al teaches luminous modules with a light input area [22] for backlight a LCD.

Ohtsuki discloses using LED's [50] to illuminate the light input part [50a] of a luminous body [50] for use with a display. [See column 16 line 21 through column 17 line 29.]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the displays taught by Ranganathan by backlighting the displays [102-105] with the modules of Higuchi wherein the light sources are replaced by LEDs as taught by Ohtsuki. Although Ranganathan shows the four display combination in figure 1e including an OLED display, based on using only LCD displays in the combination of figure 1d, it would have been obvious to create the arrangement of figure 1e using all LCD displays based on cost, size, power consumption and quality as suggested in Ranganathan et al in paragraph 71. The use of Higuchi et al backlight modules to illuminate the displays of Ranganathan is motivated by Higuchi's suggested advantage of improved lighting for large displays instead of a single light source for all the displays of Ranganathan, each display would be lit by at least one module of Higuchi using LEDs for improved light quality of smaller light modules and the lower cost/longer life of LEDs.

Re claims 6 and 18: Ranganathan et al fails to teach the diagonal length of the first and second modules being an integer multiple of 1 inch or the ratio of length to

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width of the modules being 4:3. The length ratio, however, is only provided as a preferred configuration and therefore is not a positive limitation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to design the displays of Ranganathan with integer diagonal lengths because it is common in the art of displays, especially large displays used for television to market the screen size by an integer number of inches from corner to corner. This way the displays of Ranganathan could be used or sold individually using easy to understand length values. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum range for sizes involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re claims 7 and 19: Although Ranganathan fails to teach the first module having a diagonal of 5 inches and the second module having a diagonal of 7 inches, it would have been obvious to one of ordinary skill in the art to select these integer diagonal lengths based on the resulting integer side lengths of the corresponding rectangle. The 3:4:5 triangle is commonly learned by high school geometry students and used as a common example for providing easy to deal with values. It has been held that discovering an optimum value of a result effective variable, Ranganathan teaches size as a factor is selecting displays [paragraph 71], involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ (CCPA 1980).

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Re claims 9 and 21: Ranganathan fails to teach an input area, output area or reflective coating.

Higuchi teaches a backlight module for illuminating liquid crystal displays like those of Ranganathan, wherein each backlight module includes a light input area [22], a light output area [25], and a reflector [23] on the area that is not the input or the output.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the displays of Ranganathan et al by using the specific backlighting apparatus of Higuchi in order to provide even lighting over the surface of the displays by using at least one module of each display while the backlight units are designed to be brought together as the displays of Ranganathan are brought together.

Re claims 10 and 22: As applied to the modified Ranganathan in claim 16, Higuchi further teaches light guides with tapered cross sections.

Re claims 11 and 23: As applied to the modified Ranganathan in claim 20, Higuchi discloses wherein the thickness of the luminous body [BL] next to the light input area [22b] is greater than the thickness of the light input part [22], with a step [22a] being formed such that the luminous modules overlap when put together to form a luminous area such that the light input part is covered by the adjacent luminous module. [See figures 3 and 4].

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Re claims 12 and 24: As applied to the modified Ranganathan applied to claim 20, Higuchi further teaches a reflective structure [23] to direct light into the region of a step.

(10) Response to Argument

The appellant argues, "Ranganathan discloses a plurality of displays each having a single backlight OLED or LCD panel. That is, Ranganathan clearly teaches that a single sub-screen is back-lit by a single display panel." [page 5 lines 16-18] The examiner agrees that the reference suggests each sub-screen is back-lit by a single backlight module. The examiner however is interpreting the combination of sub-screens as providing a single display. The "display" claimed is not provided with structural limitations which limit out this interpretation.

In response to appellant's arguments against the references individually, specifically that Higuchi fails to teach four different sized modules [pages 5 and 6], one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case Higuchi suggests modules for backlighting LCD displays, where the modules would be sized to the sub-screens of Ranganathan, wherein Ranganathan suggests the sizes claimed.

In response to appellant's arguments against the references individually, specifically that Ohtsuki fails to teach a plurality of polygonal luminous modules, one

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cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the sole purpose of citing Ohtsuki is to present use of the concept of a "display" in the prior art which is not limited to a single sub-screen liquid crystal panel.

Again, the issue revolves around the concept of a "single display" as argued. The examiner continues to maintain that the combination of four sub-screens [102-105] shown in figure 1E of Ranganathan may be reasonably considered as a "single display" as they may all present information simultaneously. The examiner does not interpret the scope of the claim to require a plurality of modules behind a single sub-screen [102] of Ranganathan as the appellant's arguments suggest the scope to be.

The appellant suggests the advantageous technical effect of homogeneously illuminating the display. The examiner notes that the goal of homogeneous illumination is well known in the art and discussed by Higuchi et al as "brightness evenness" [at least column 7 line 57].

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/David R Crowe/
Examiner, Art Unit 2885

/Jong-Suk (James) Lee/
Supervisory Patent Examiner, Art Unit 2885

Conferees:

Jong-Suk (James) Lee /J. L./
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TQAS TC 2800